

# Utah Department of Transportation Traffic Management Division

July 2016

Monthly Report



2060 South 2760 West Salt Lake City, Utah 84104 801-887-3710 [www.udottraffic.utah.gov](http://www.udottraffic.utah.gov)

## Mission of the Traffic Management Division

- To Support UDOT and the Department of Public Safety to Achieve Zero Fatalities.
- To Help Provide Reliable and Efficient Travel Throughout Utah.
- To Provide Useful and Timely Real-time Traffic Information.
- To Work Together with Other Government Agencies to Serve the Public.
- To Provide Excellent Customer Service.

## Traffic Operations Center



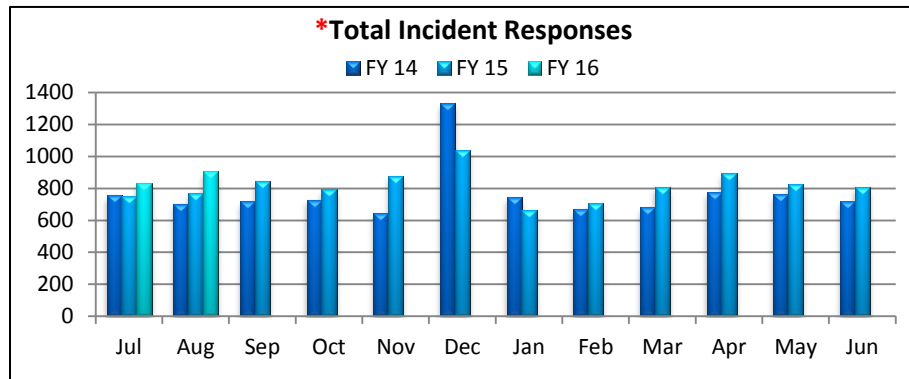
## Field Devices Summary

Freeway PTZ Cameras	385
Surface Street PTZ Cameras	476
RWIS & Contracted Weather Cameras	216
Viewable Detection Cameras	54
Total Cameras	1,131
Freeway VMS	98
Surface Street VMS	56
Portable TOC VMS	7
Legacy Trucks Prohibited VMS	21
Variable Speed Limit VMS	15
Chain-Up / Avalanche Warning Signs	21
Total VMS	218
HAR (27 permanent/5 portable)	32
RWIS	100
Ramp Meters	63
TMS	549
Express Lane Plazas	73
Traffic Signals	2,174

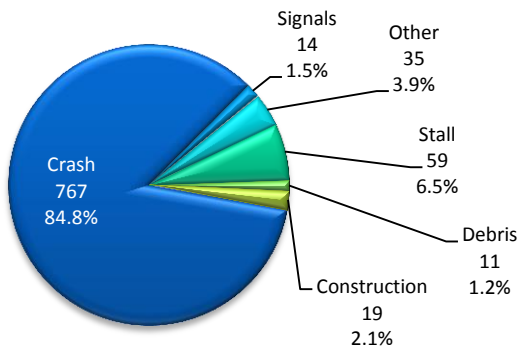
## Operations Summary

VMS Messages Displayed	84,041
Signal Timing Work Orders	30
Signal Maintenance Work Orders	174
All New Work Orders	496
Work Orders Closed During the Month	693
Incident Responses by the TOC	905
Incident Duration Average Minutes	58
IMT Assists	2,238
Website Visitor Sessions	94,342
511 Calls	9,153
Weather Desk Calls	157
Ask Commuterlink Questions	41
Average Speed AM Peak (07:00-08:00)	68.50
Average Speed PM Peak (17:00-18:00)	61.37
Incidents Using Signal Timing Assistance	108
UDOT Traffic Followers and Re-tweets	423,783
UDOT Traffic App Total Downloads	3,829

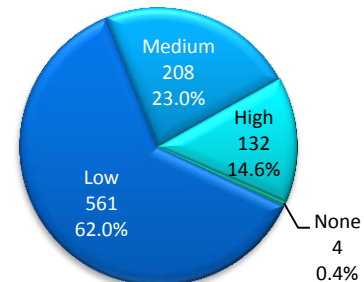
An incident response occurs each time an incident is recorded in the ATMS system. These can be of several types, including crash, construction, debris, stall, congestion, or other. Crashes are separated into three subcategories: property damage, personal injury, and fatal. Each time an incident is created, information is sent to the 511 system, the website, and to the public through email alerts. An incident remains active until it has been completely cleared from the roadway.



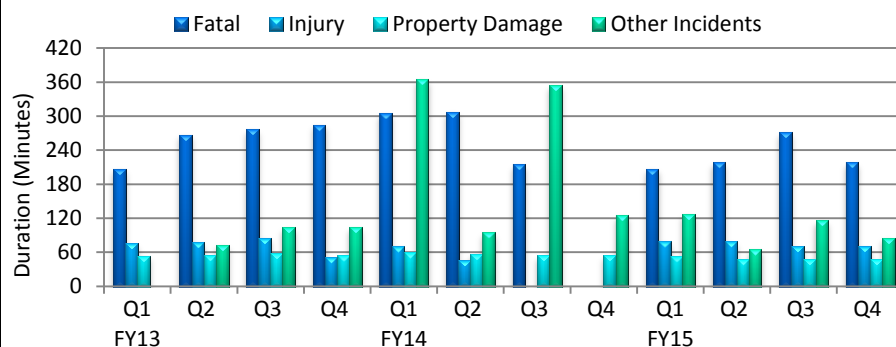
**\*Incidents By Type for August 2015**



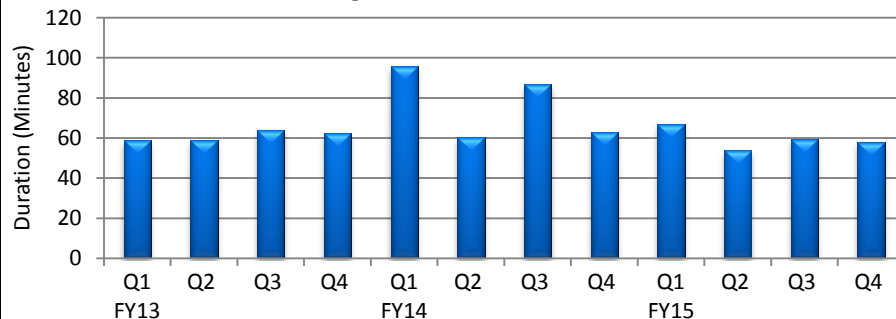
**\*Incidents by Severity for August 2015**



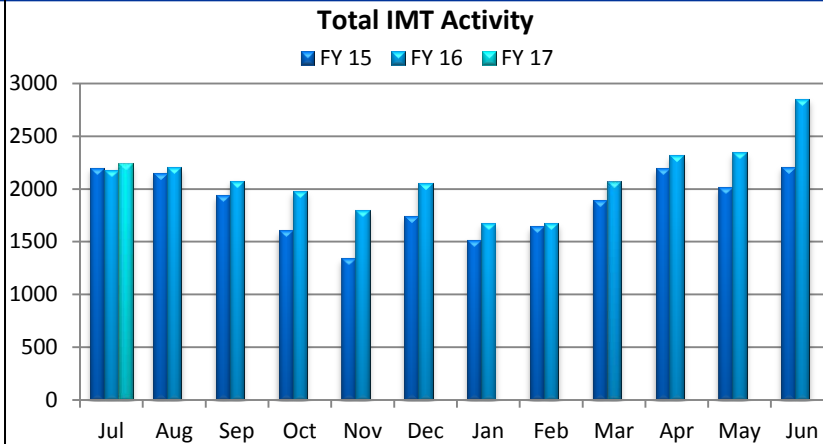
**\*Average Crash Duration**



**\*Average Duration of All Incidents**

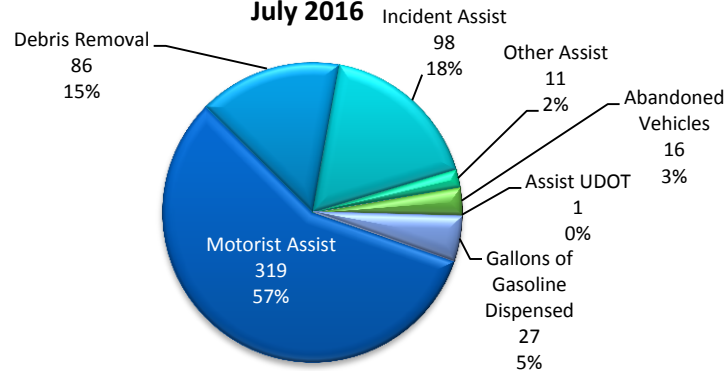


## Incident Management Team (IMT) Activities



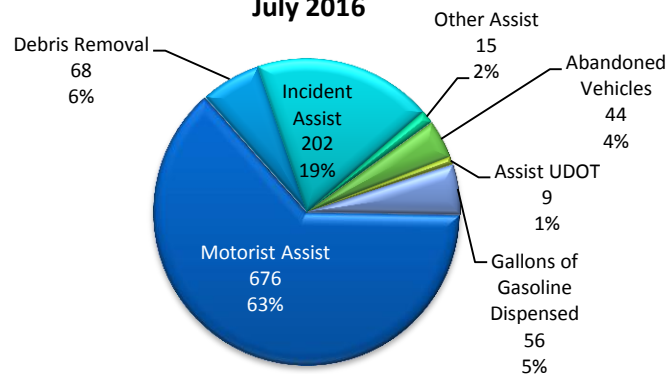
### IMT Activities by Type for UDOT Region 1

July 2016



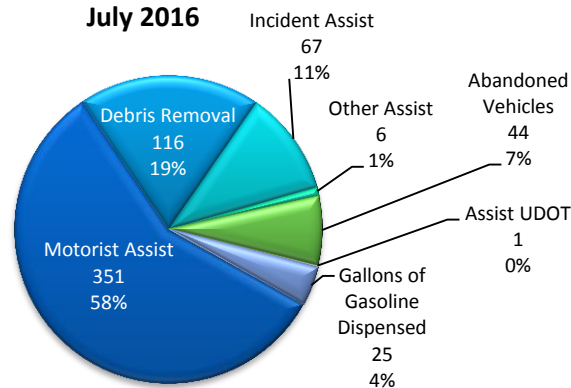
### IMT Activities by Type for UDOT Region 2

July 2016



### IMT Activities by Type for UDOT Region 3

July 2016



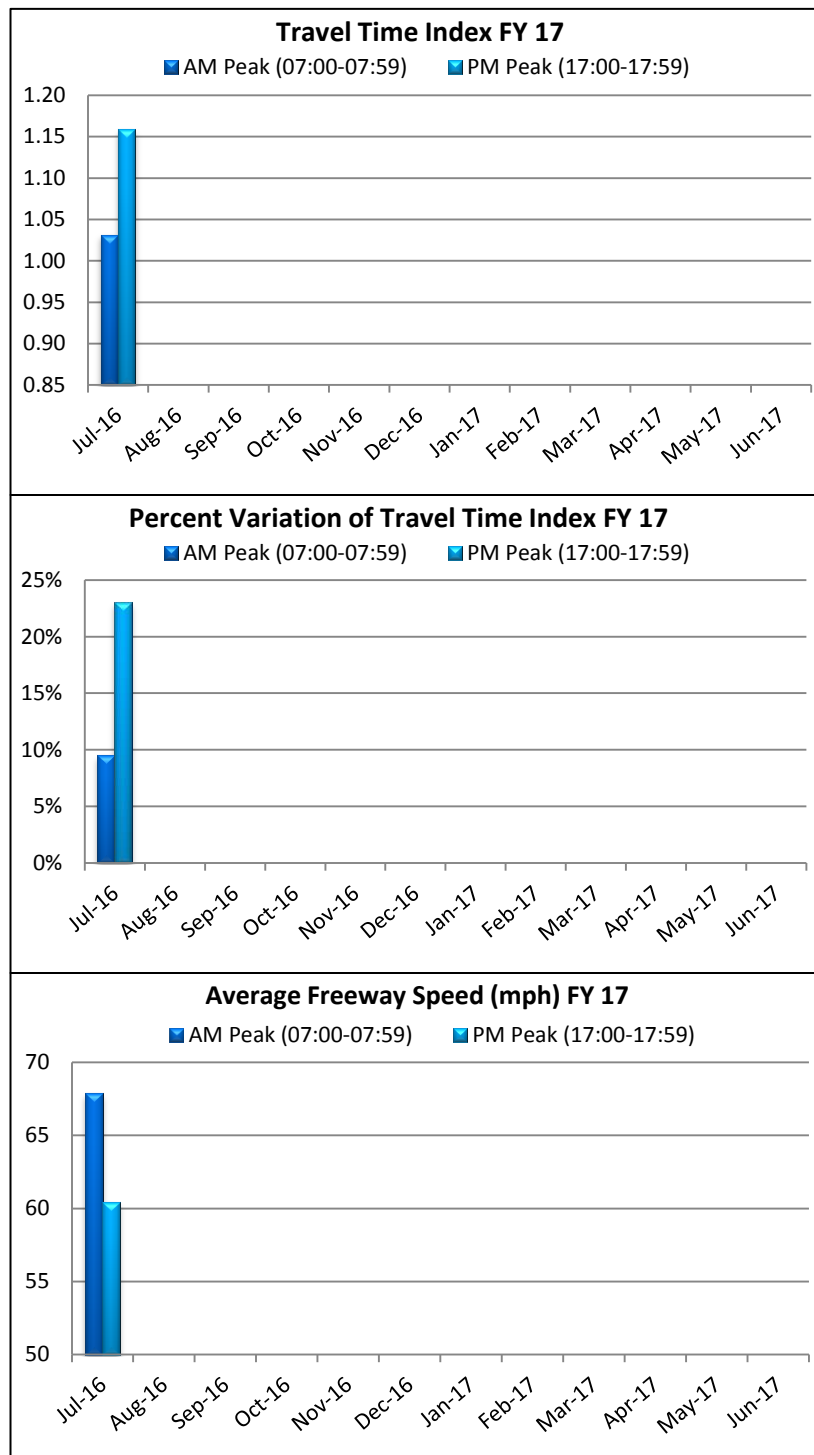
## Freeway Traffic Level of Service

Freeway flow measures are taken from the Traffic Monitoring Stations (TMS) located throughout the Wasatch Front. As more TMS sites are installed throughout the state, they will be included in these performance measures.

**Travel Time Index:** This measure of mobility is based on freeway speeds and is weighted by segment lengths and by the traffic volume. A value of 1.0 represents free-flow speeds. A value of 1.12 indicates that the average vehicle trip takes 12% longer than if that were the only vehicle on the freeway.

**Percent Variation of Travel Time Index:** The percent variation in the Travel Time Index is a measure of how much the Travel Time Index changes from day-to-day.

**Average Freeway Speed:** The freeway speed is weighted by volume.



## Freeway Traffic Level of Service

### Peak Travel Time Index by Segment for July 2016

(+) Direction (NB, EB, Clockwise)

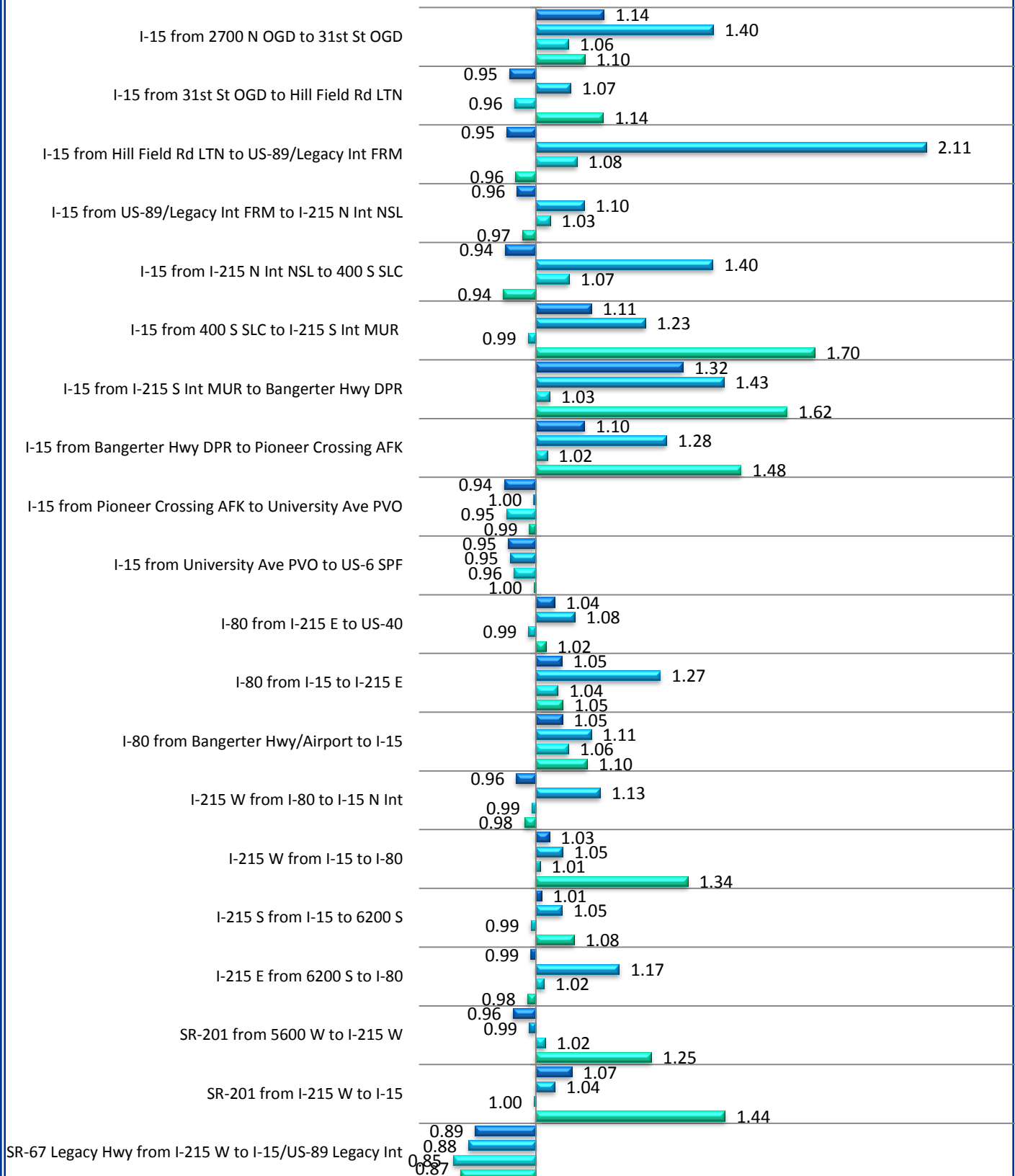
(-) Direction (SB, WB, Counter Clockwise)

■ AM Peak (07:00-07:59)

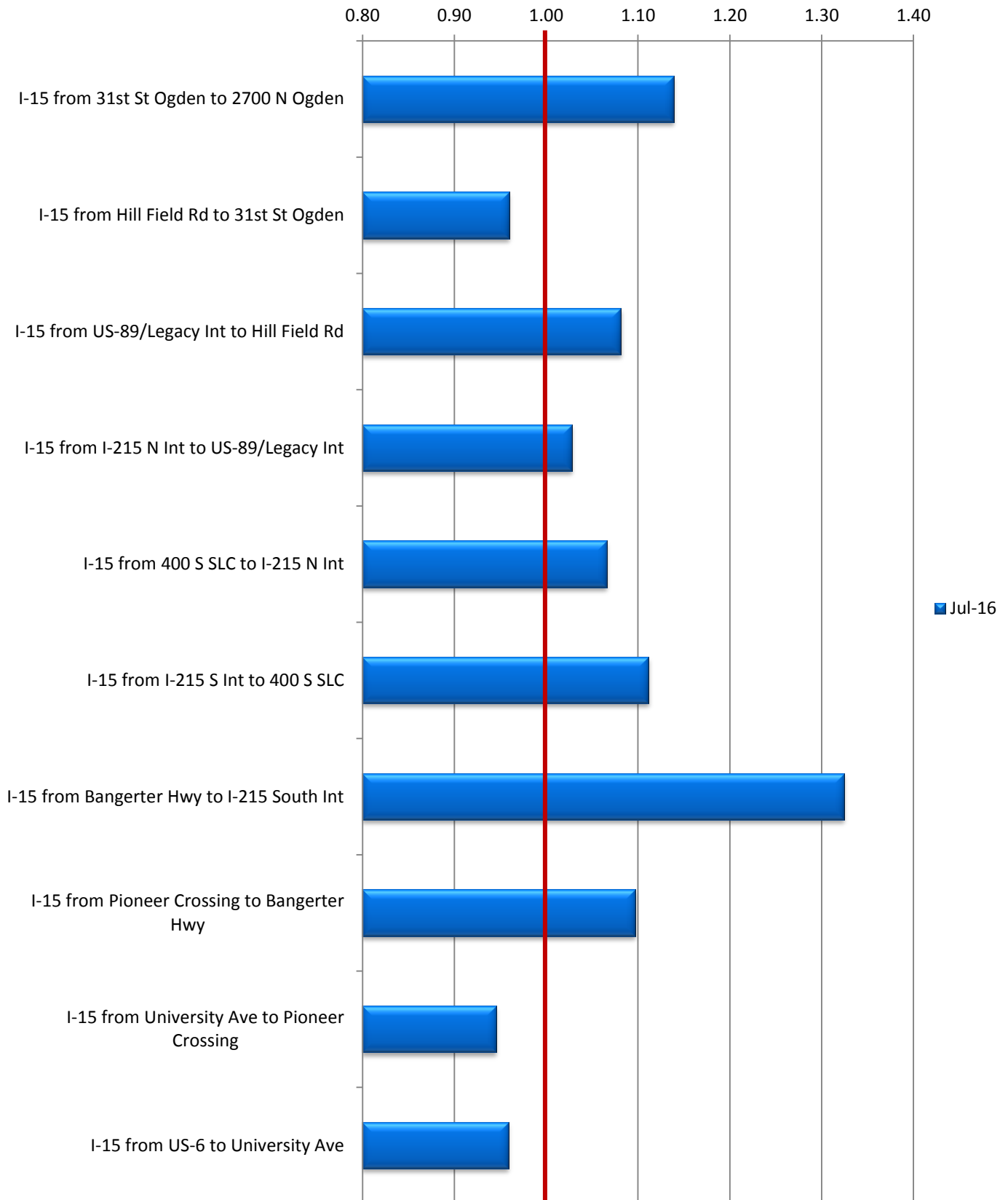
■ PM Peak (17:00-17:59)

■ AM Peak (07:00-07:59)

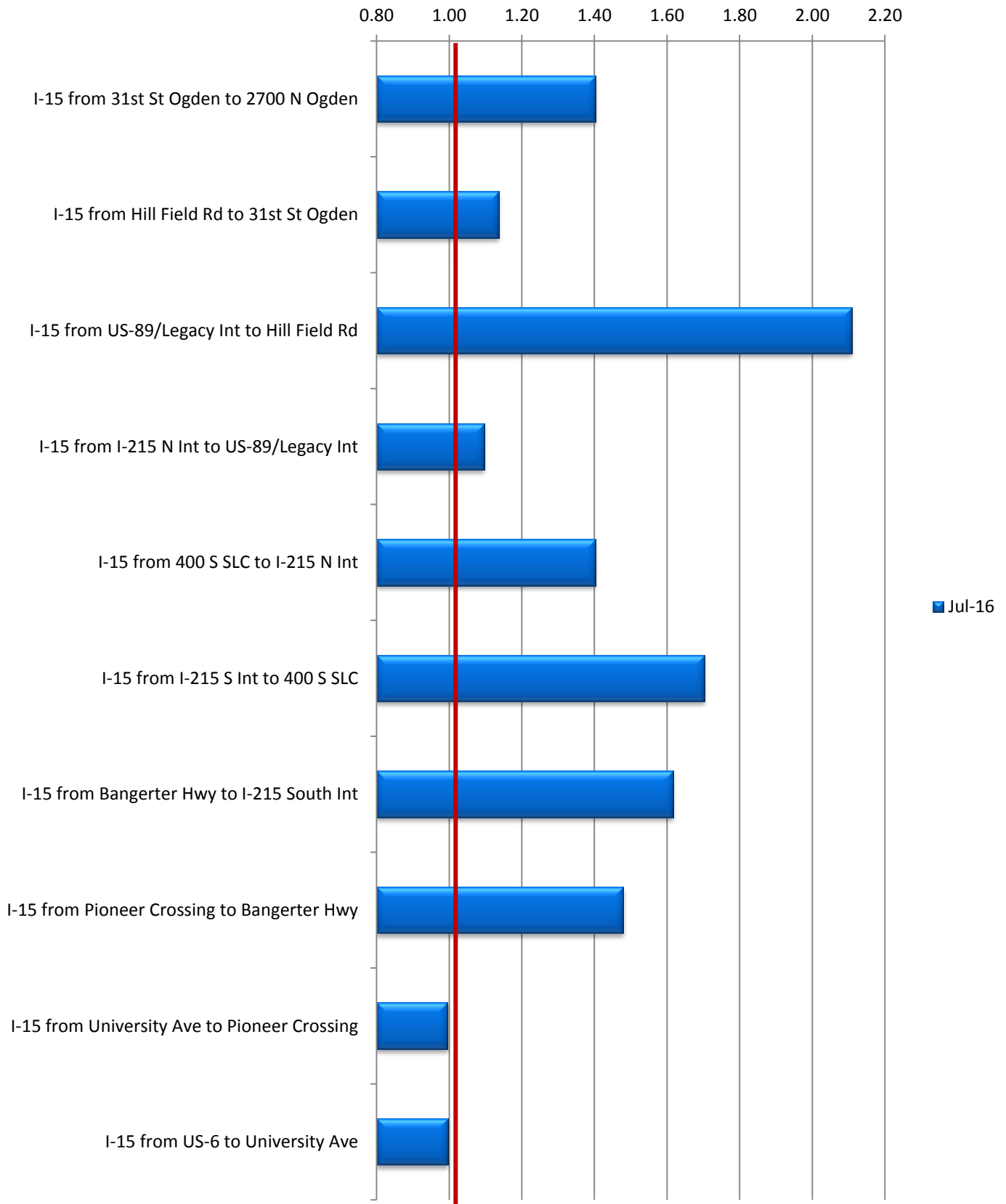
■ PM Peak (17:00-17:59)



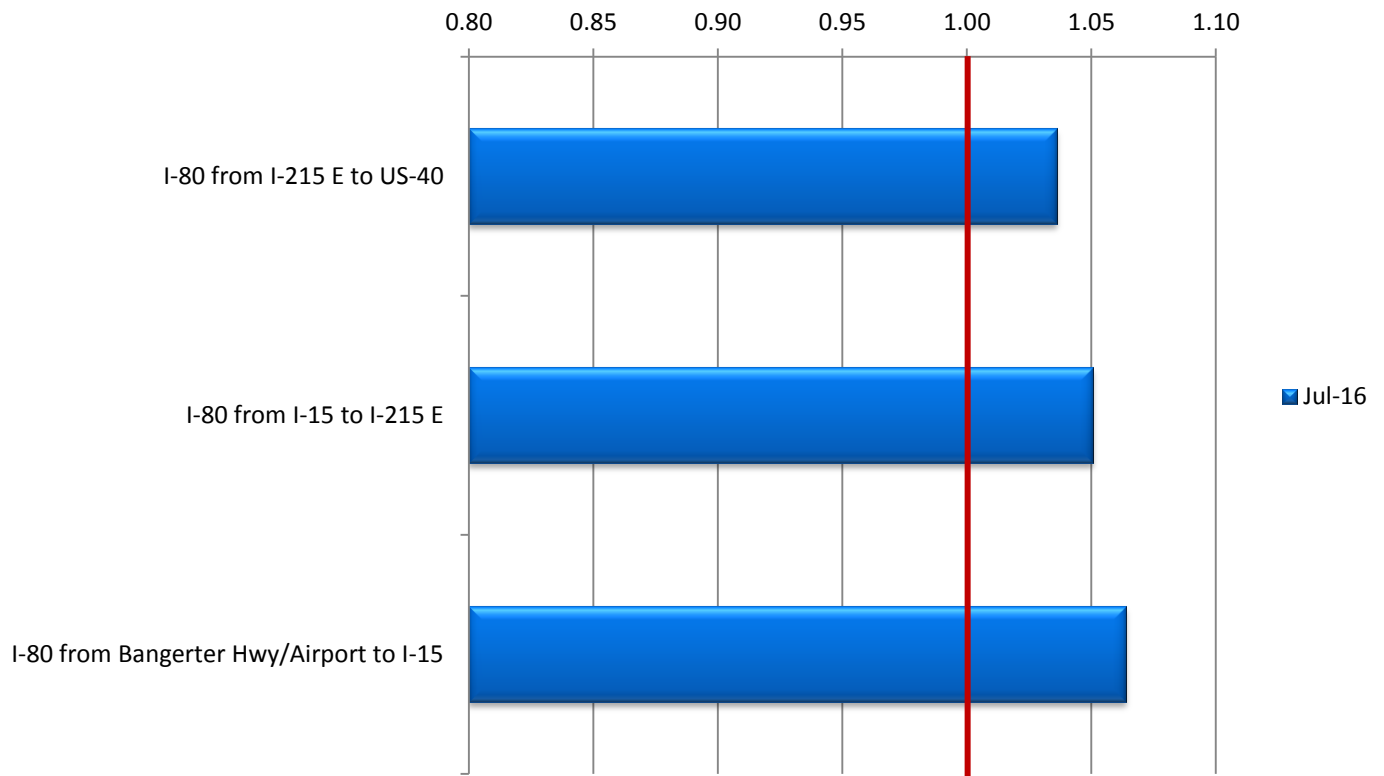
### AM Peak Travel Time Index for I-15 FY 17



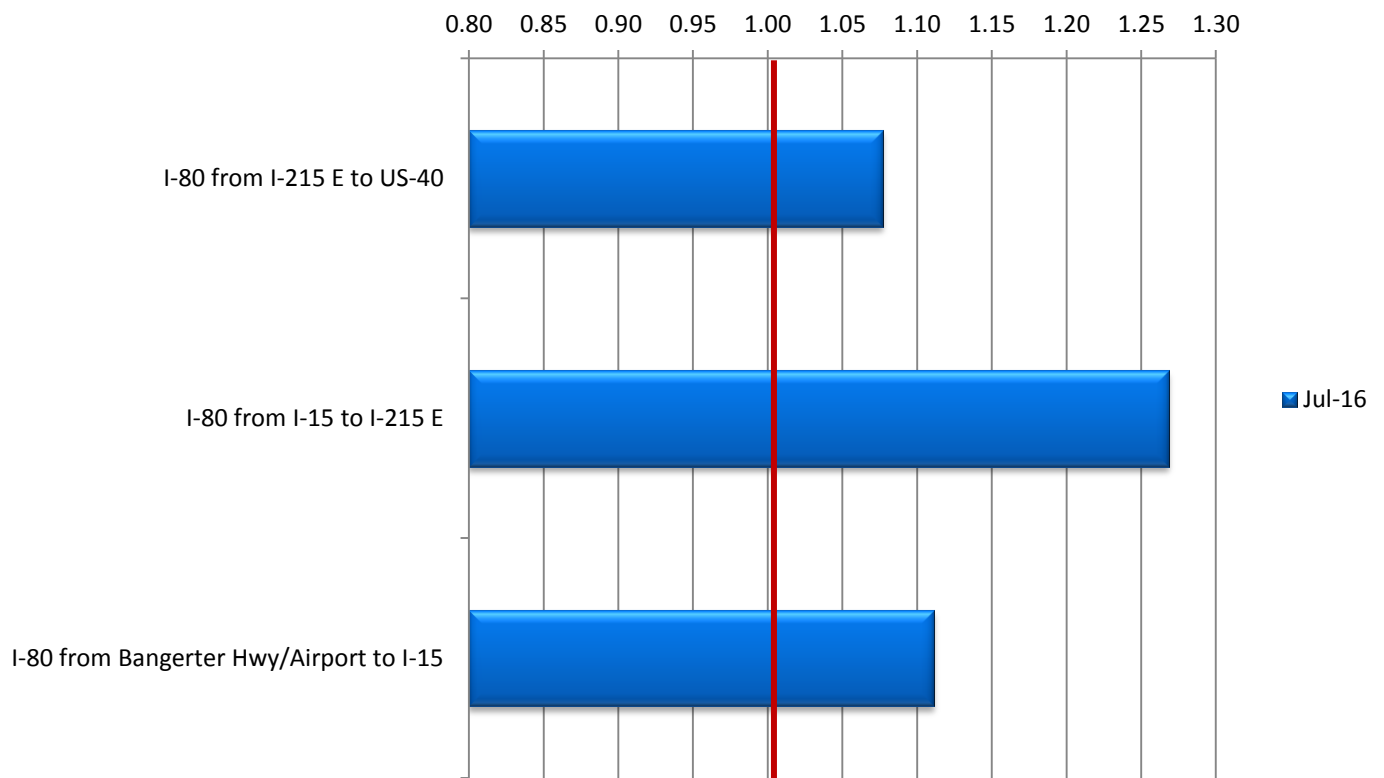
### PM Peak Travel Time Index for I-15 FY 17



**AM Peak Travel Time Index for I-80 FY 17**



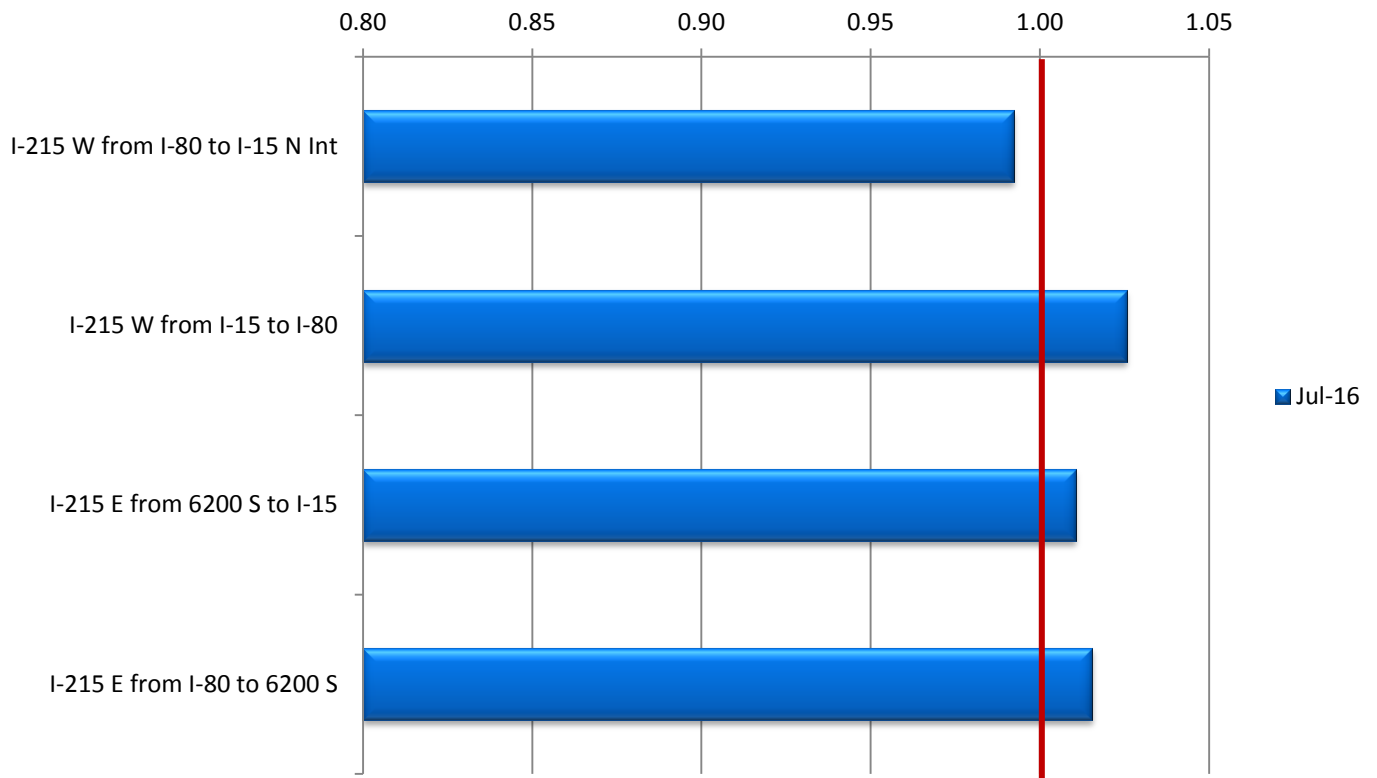
**PM Peak Travel Time Index for I-80 FY 17**



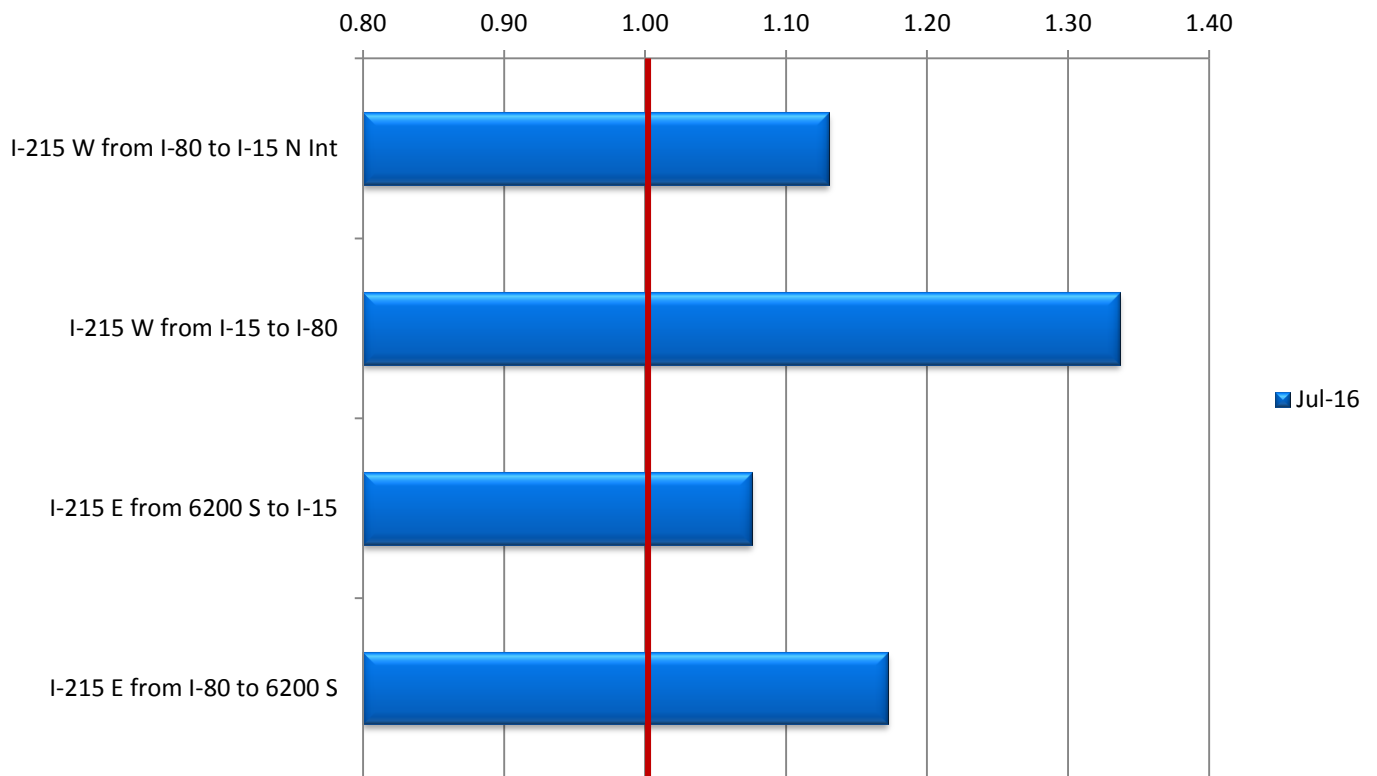


## Freeway Traffic Level of Service

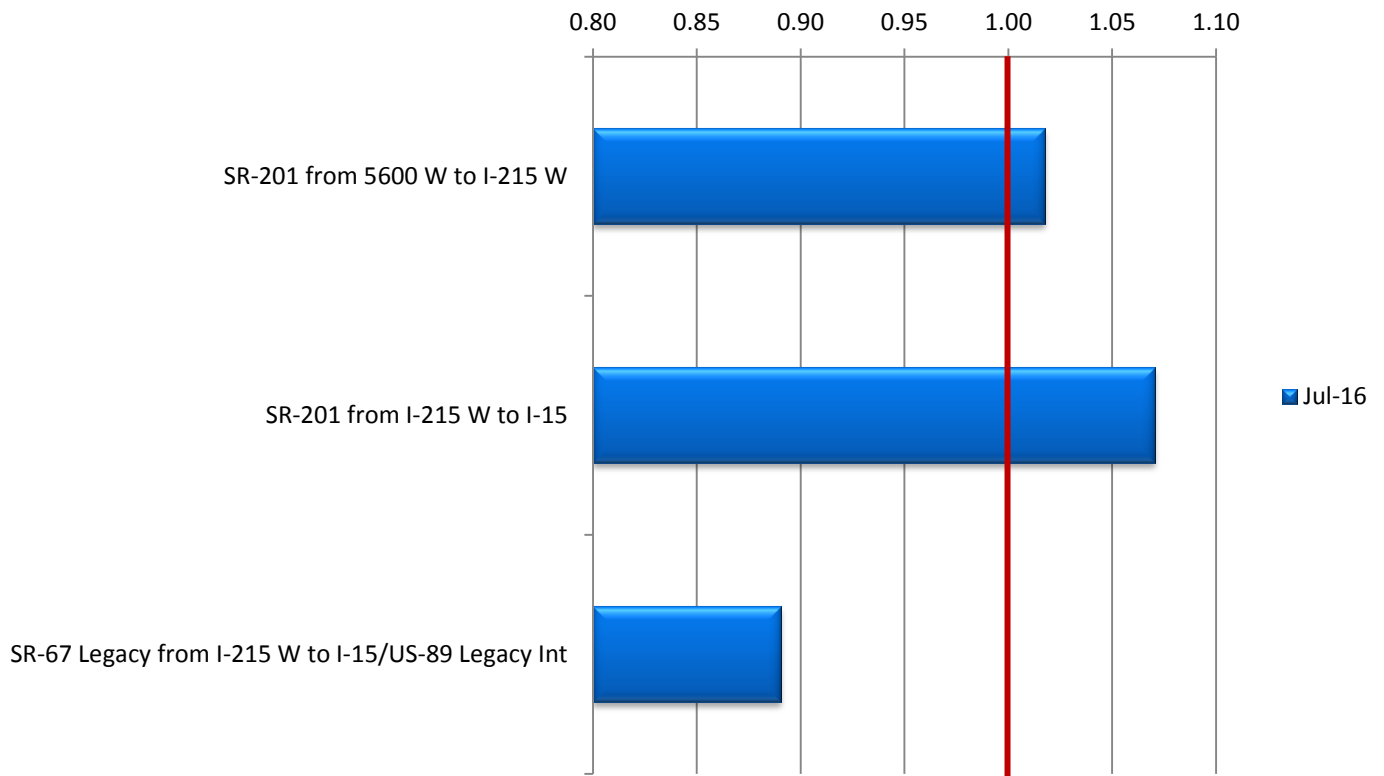
**AM Peak Travel Time Index for I-215 FY 17**



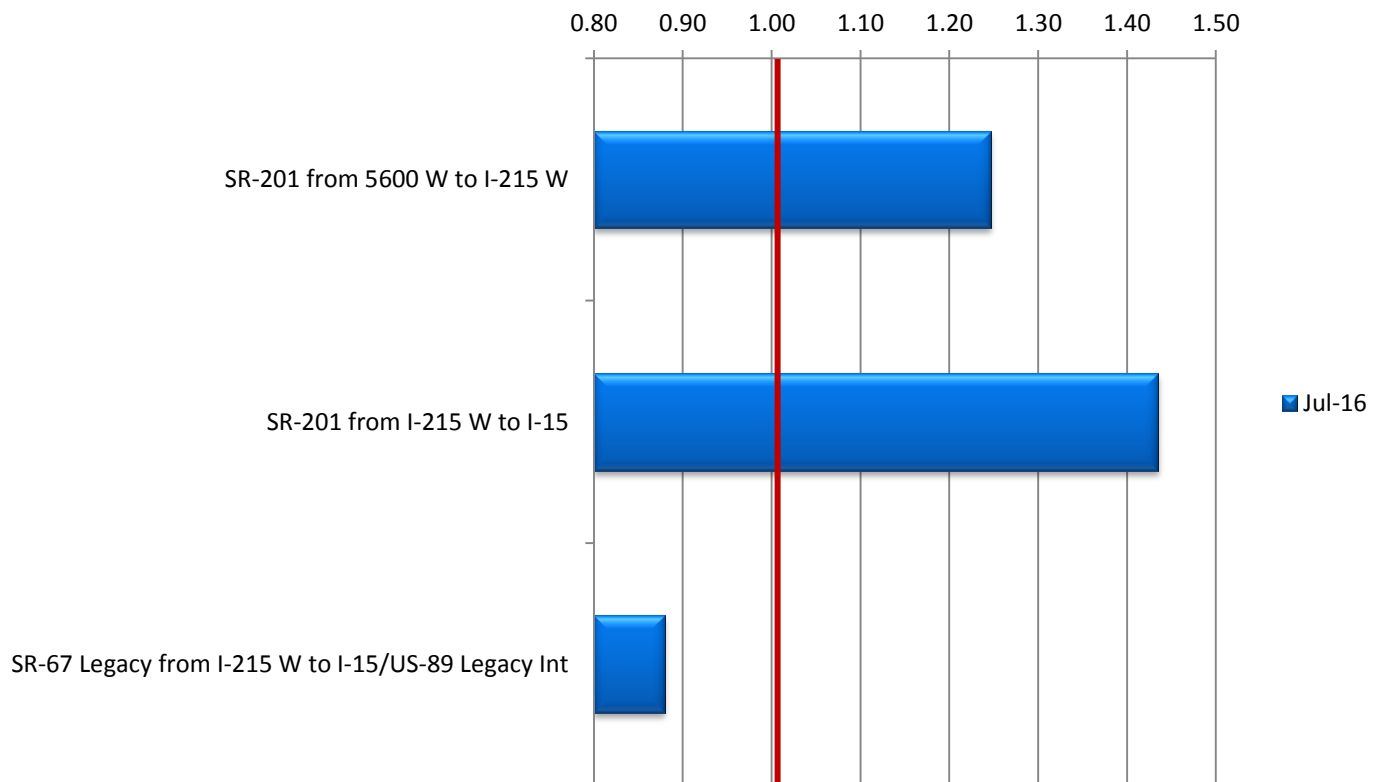
**PM Peak Travel Time Index for I-215 FY 17**



**AM Peak Travel Time Index for SR-201 and SR-67 Legacy Hwy FY 17**

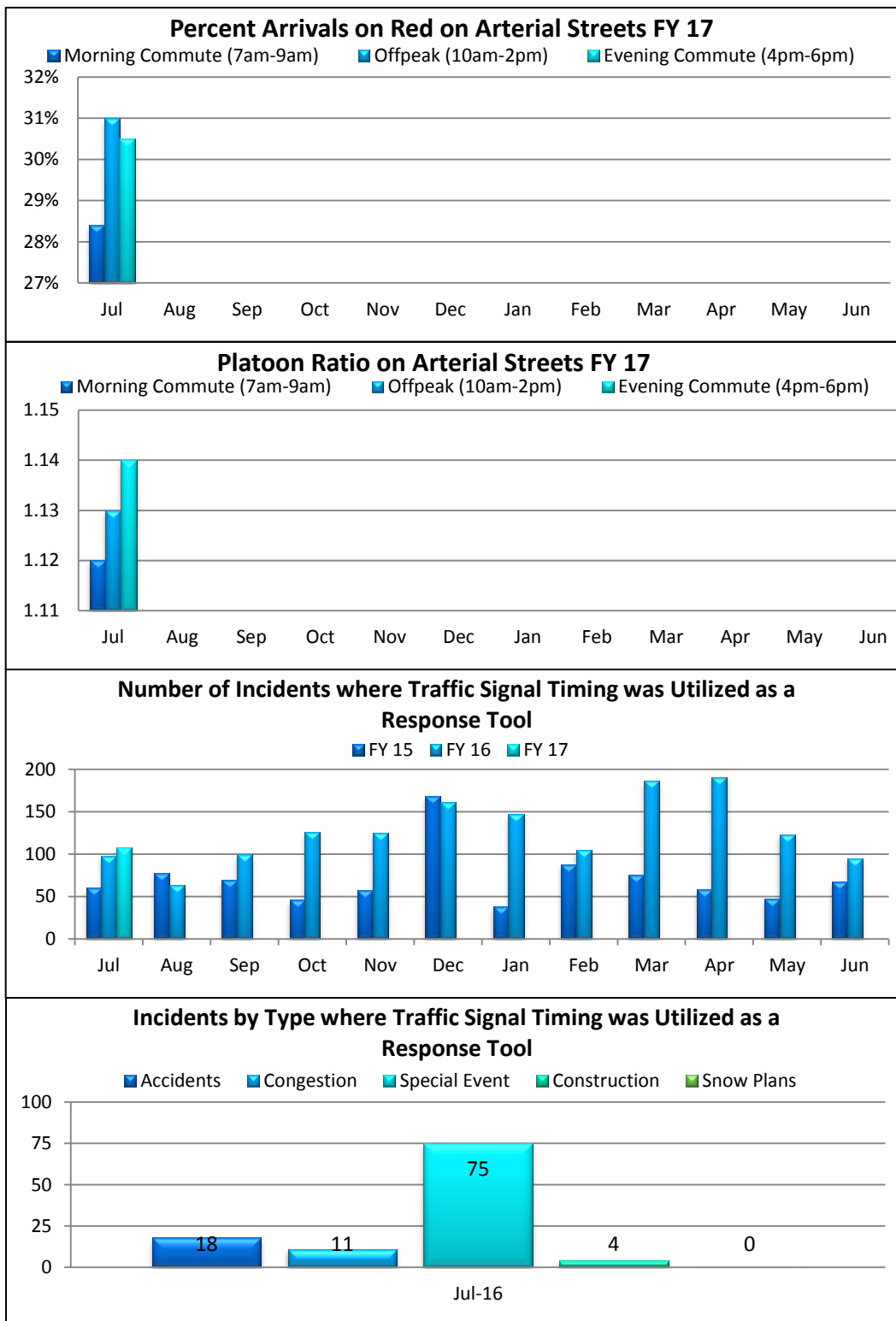


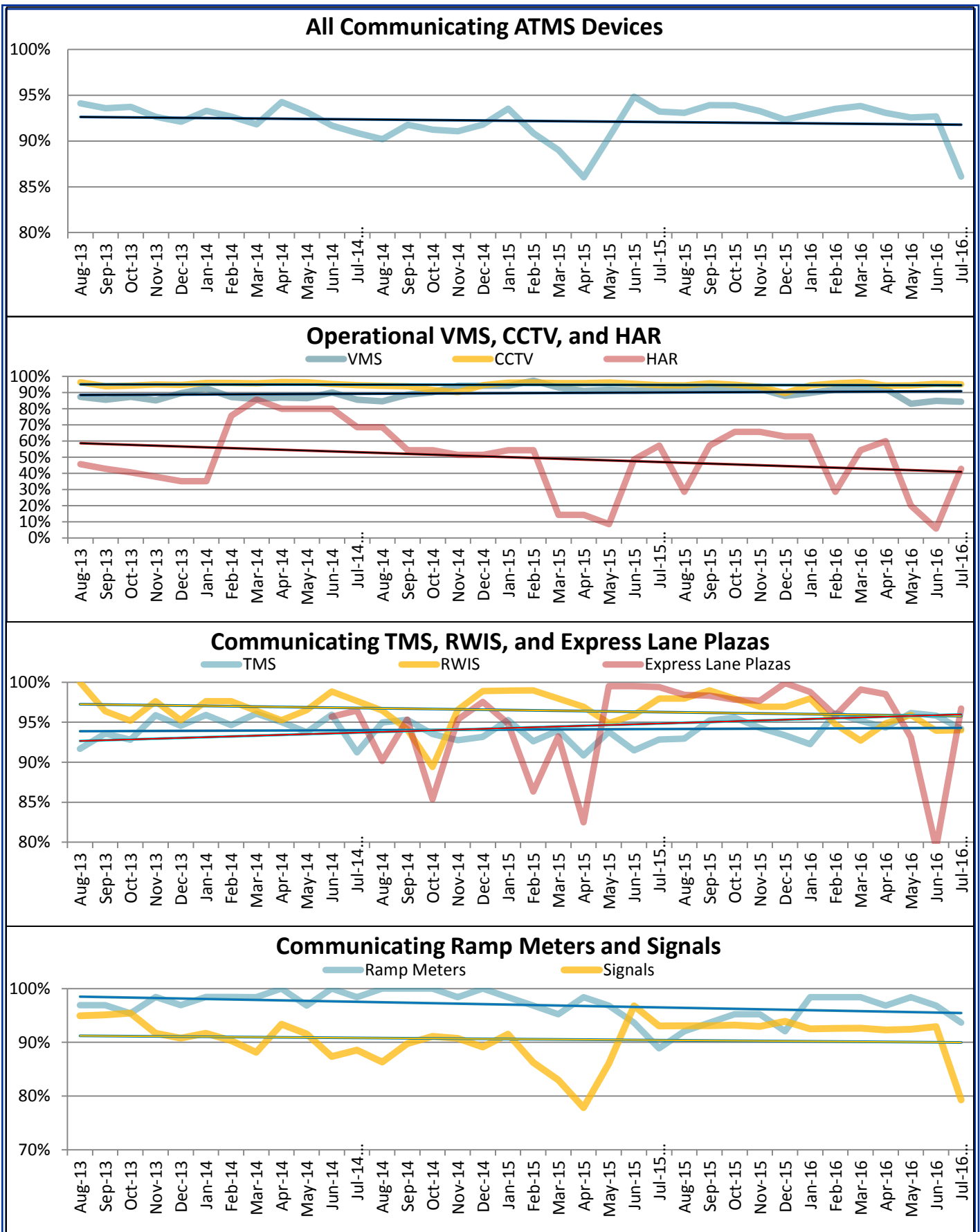
**PM Peak Travel Time Index for SR-201 and SR-67 Legacy Hwy FY 17**

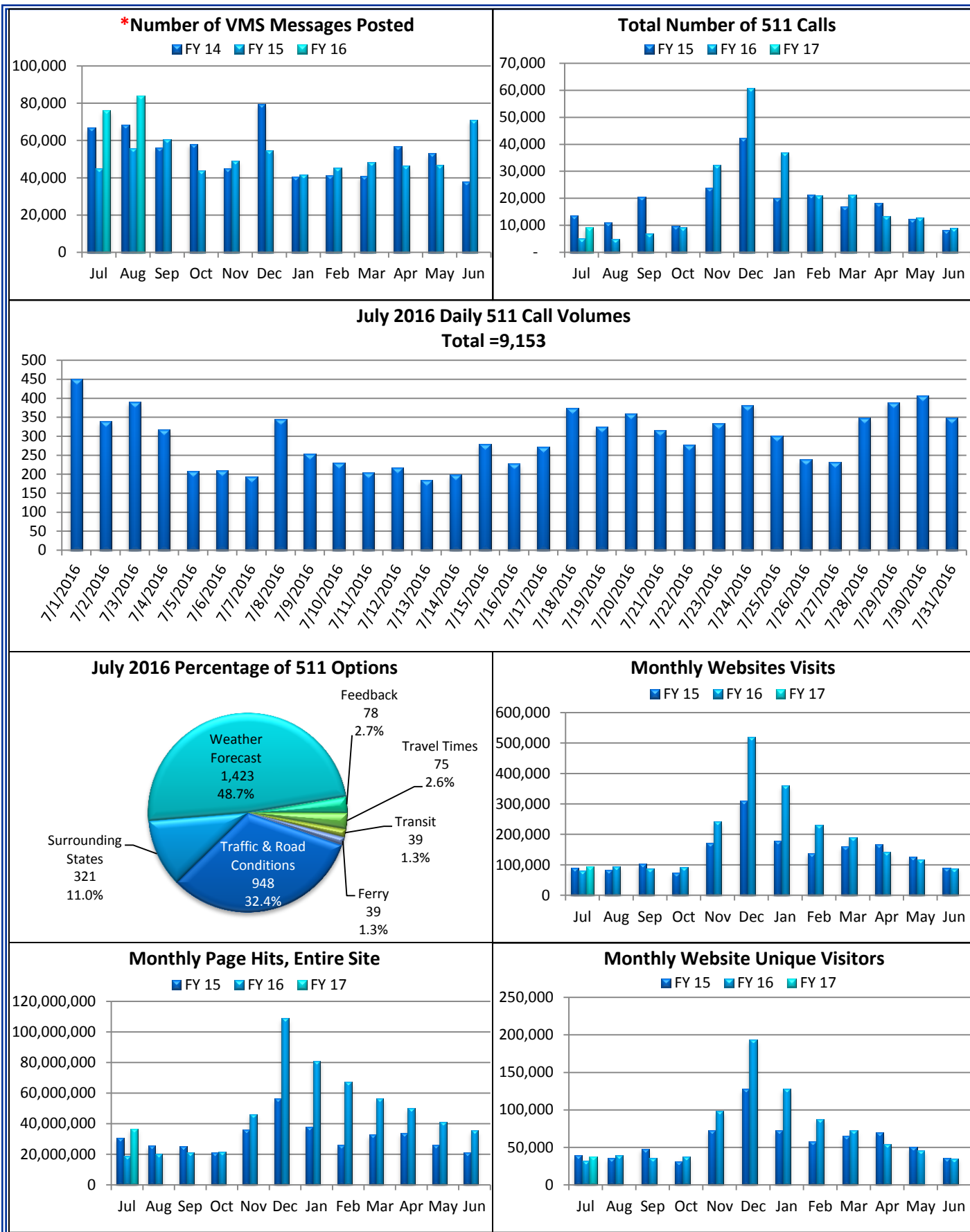


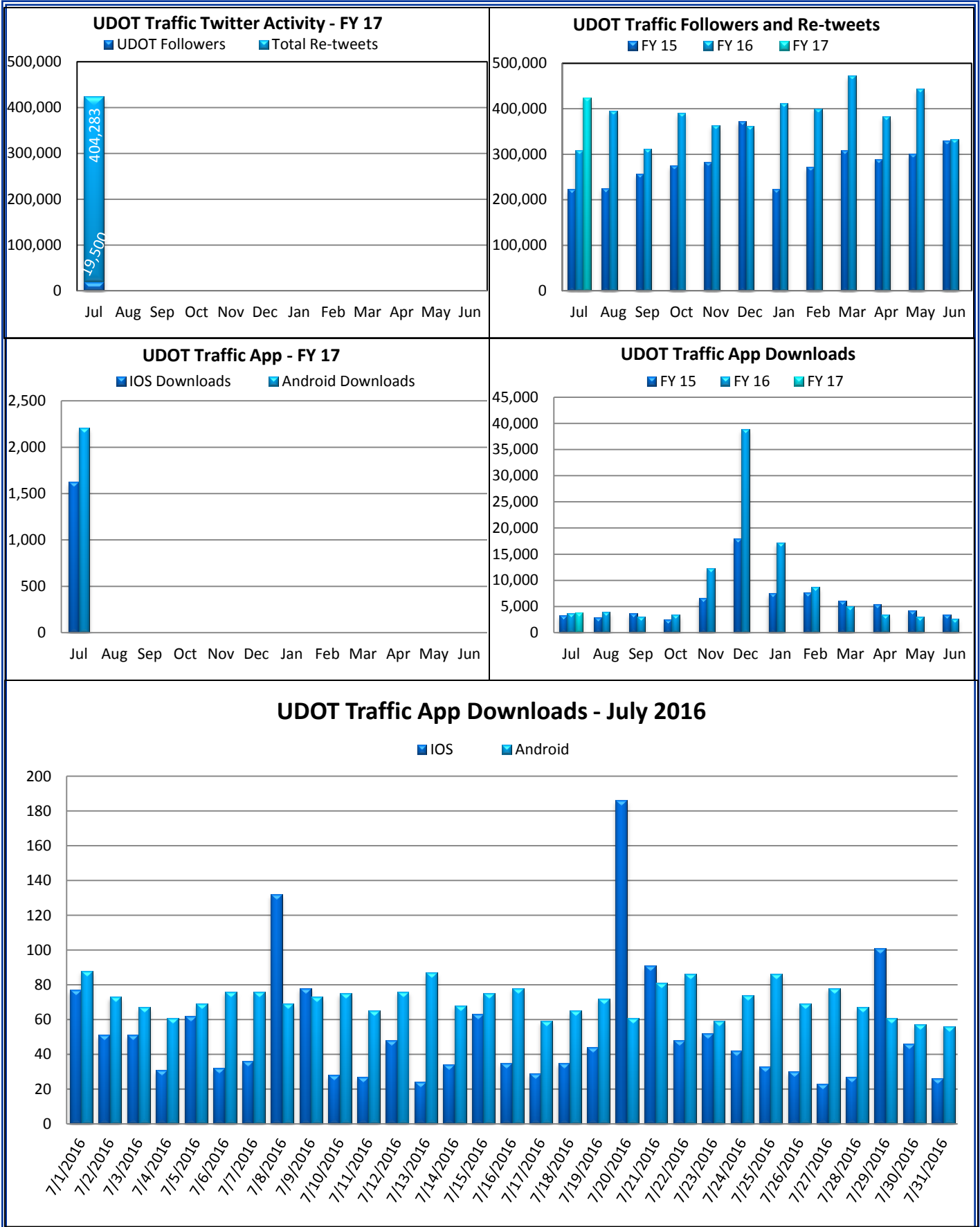
## Arterial Traffic Level of Service

The percent arrival on red along the arterial statistics are generated automatically through the automated traffic signal performance measures, which show real-time and historical functionality at signalized intersections. The system automatically time-stamps when each vehicle arrives at the intersection and then compares the detection time-stamp if the phase was green or red. The percent arrival on red data is averaged over the 24 hours of the day and days in the month. . The lower charts shows the number of incidents where traffic signal timing was modified in order to help traffic flow around closed lanes, or to help relieve excessive congestion.

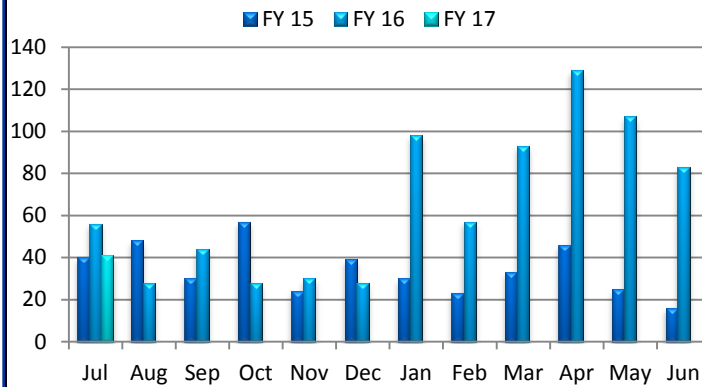




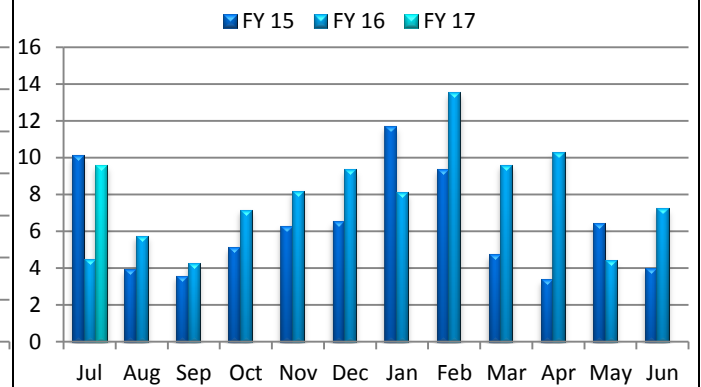




## Number of "Ask UDOT Traffic" Questions

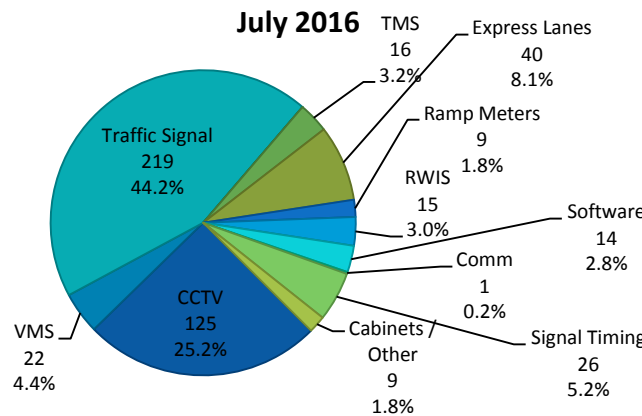


## Overall Average Work Order Turnaround Days

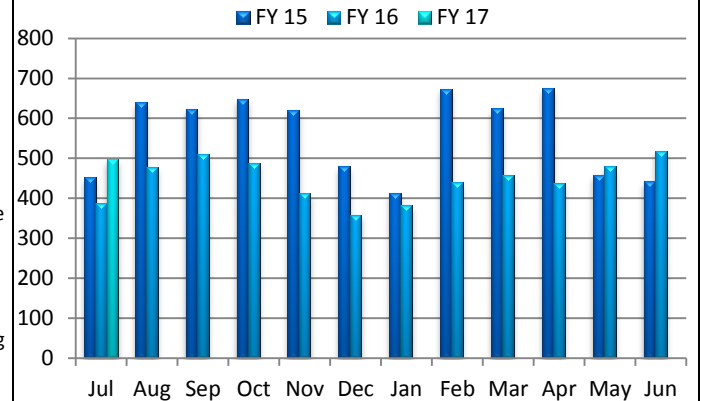


## New Work Orders by Device Type

July 2016

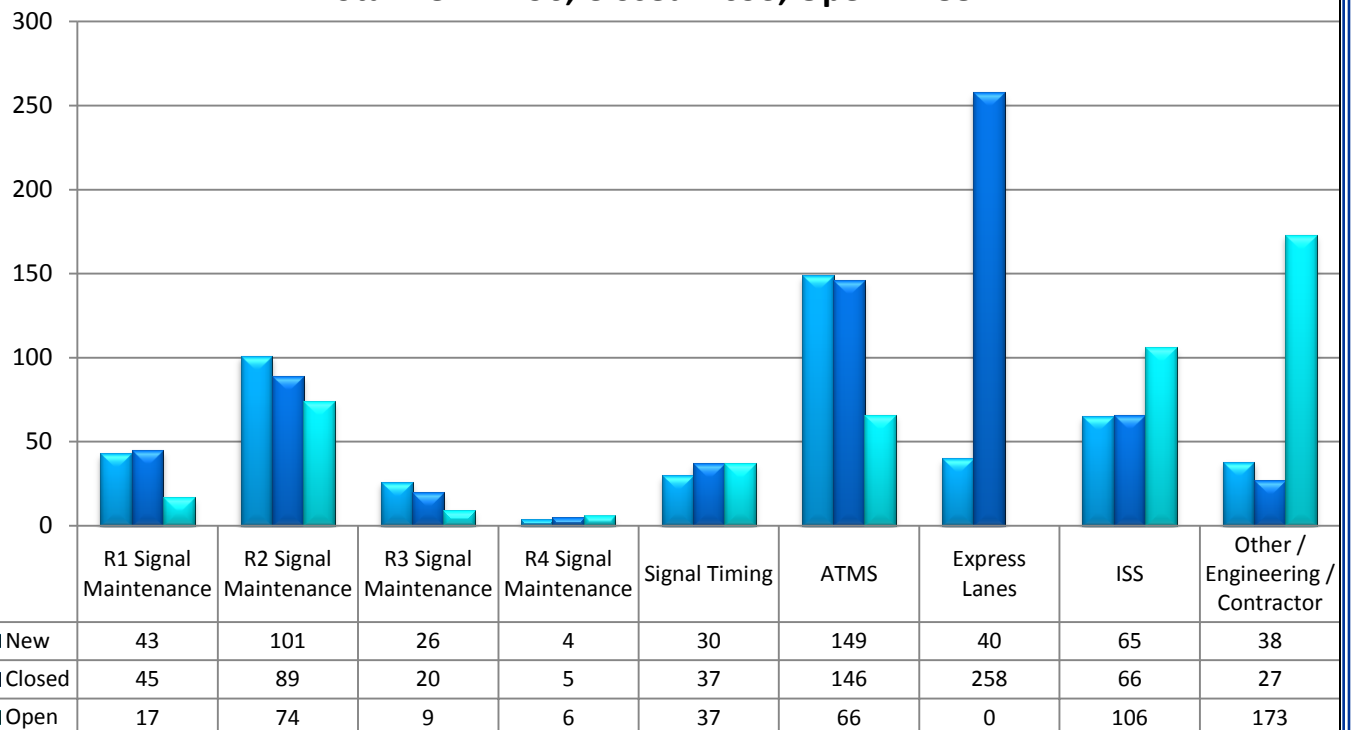


## Number of New Work Orders



## Work Order Statistics by Group - July 2016

Total New = 496, Closed = 693, Open = 488





### CONTROL ROOM

Control Room Performance Metric Reporting started in July. This long term project will measure control room operations based on quantitative and qualitative data.

Operators in the control room supported the July 4<sup>th</sup> and 24<sup>th</sup> parades, events, and firework displays throughout the area, the Utah Championship Golf Tournament, and the Days of 47 barbeque.

Control room operators have had a heavy focus on high impact road work this summer. In July, the operators have been managing traffic for the I-215/SR-201 ramp and lane closures, I-15 Point Project, I-15 in Box Elder County, 400 North in Davis County, I-80 lane closures down to a single lane, US-40 in Park City and other smaller projects.

TOCL was activated three times in July.

### TRAVELER INFORMATION



The Traveler Information Team hosted the Zero Fatalities Buckle Up reminder for TOC and Region 2 staff, represented UDOT at a Kaysville PD Amber Alert review meeting, and assisted UDOT Communications and the Office of Tourism to update the State Highway map. The team also led discussions with Zion National Park about how to best use VMS to improve safety on US-191. In addition, the team hosted TOC tours for a Boy Scout troop and a University of Utah summer camp, led the Utah Championship Golf Event Planning Task Force, and assisted the UDOT Emergency Manager with emergency operations planning discussions.





### WEATHER INFORMATION



### UDOT WEATHER GROUP

The Weather Group had 62 overall UDOT weather interactions, 37 outgoing weather alerts, One National Weather Service collaboration, and no Road Weather Alerts.

### Climatology

Most of the state was normal or hotter than normal for the month of July. Salt Lake City experienced the 4th hottest July on record, with the hottest low temperature on record (81 degrees) occurring the morning of July 18<sup>th</sup>. Northern Utah was drier than normal, but southern Utah was largely wetter due to monsoonal moisture.

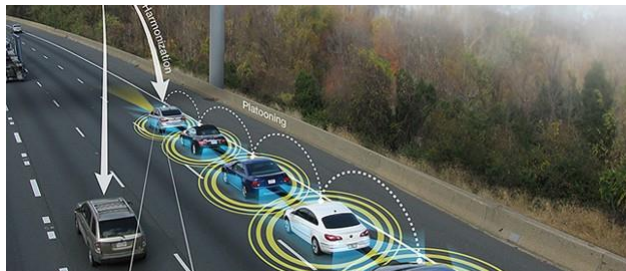
### Weather Operations

A journalist with Traffic Technology International Magazine interviewed Jeff Williams about the Weather Group's use of portable RWIS for emergency management and new RWIS location investigation. The TOC Weather Group participated in a tour hosted by the UDOT Emergency Manager for a counterterrorism tactical response group.

### ITS ASSET MANAGEMENT

The ITS Asset Management team integrated four new signals, two surface street CCTVs, and removed five detection cameras and a duplicate record for a surface street VMS in Provo Canyon.

The team has been involved with the committee updating the AIMS inventory, work order modules, and monitoring CCTVs statewide with chronic errors and missing images.



### TRAFFIC OPERATIONS AND REPORTING

Involved with Four interchanges in Region 1.

Governor's performance metric.

Logan Y- intersection analysis.

Managed Motorways detection evaluations.

Night work policy preparation.

Four Bangerter interchanges project.

SR-9 analysis.

Moab signals.

I-15 NB weave between 9000 S and I-215 analysis.

Congestion Reporting.

I-80 EIS.

Snyderville Basin development.

Utah State Developmental Property analysis.

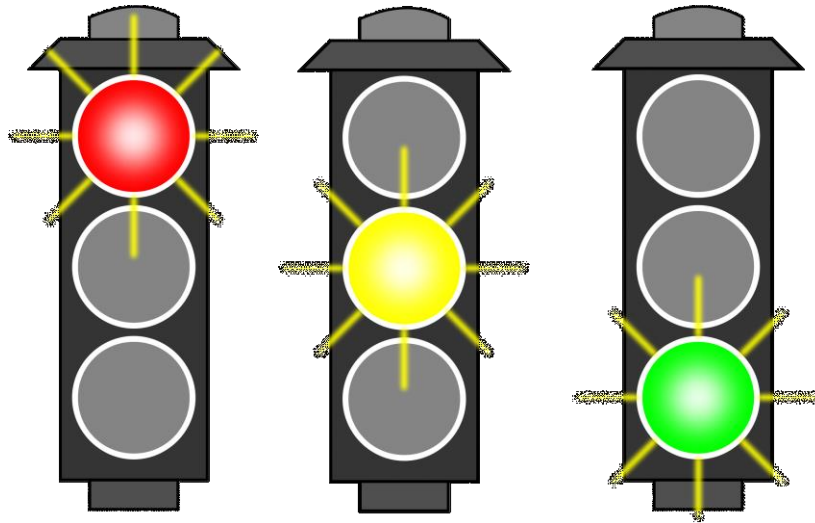
PG Blvd interchange analysis.

US-6 study.

SR-201 analysis.

MP 8 analysis.





### TRAFFIC SIGNAL OPERATIONS

#### Region 2

Rebuilt a signal on at 3900 South and 700 East in Millcreek, and assisted West Valley City getting two relocated signals back on line.

#### Region 3

Assisted with special event signal timing for a golf event at Thanksgiving Point and the Provo Stadium of Fire. Activated a new signal at Pony Express Parkway and 14600 South in Bluffdale, which is part of the I-15 Point Project. Restriped and rephrased the Pioneer Crossing DDI, adjusted signal timing and detection for construction projects in Provo, American Fork, Heber, Spanish Fork and Lehi.

#### Region 4

Installed 50 LED highway lighting luminaires, repaired several thousand feet of damaged street lighting conduit and replaced the stolen wire, replaced lights at two Cedar City intersections with new LEDs, and replaced a signal cabinet in Monticello that had been damaged by a falling tree.

### **ATMS MAINTENANCE**

#### **Field Team**

At the Tooele Hub cabinet the team redesigned and installed larger fans which eliminated fiber communications issues caused by switch over heating problems. While trouble shooting CCTV problems at SR-126 @ I-15 NB, we found a bad splice in the base of the pole. The solution required the installation of a pole mounted splice box and then connecting the conductors in the splice box. The team performed an LFOT in Spanish Fork on Main @ 300 S and 1000 N. The team also joined with the Freeway Lighting crew to redesign and build the power H frame with a disconnect and transformer. This eliminated the dry transformer, located inside the freeway lighting meter pedestal at I-80 EB between I-215 SB on ramp and I-215 NB on ramp. The team combined with the fiber crew to trouble shoot and resolve UPS problems in HUB 10.

Continued with preventative maintenance according to this year's schedule and completed 121 work orders.

#### **Lab Team**

Inclusive of Digi Terminal Servers, Traffic Signal Controllers, 2070 Controllers, Wireless Radio, Wavetronix Radar and CCTV a total of 18 devices were tested/repared. Three traffic signal cabinets were tested and burned in as Region 2 spare cabinets and two traffic signal cabinets were released to Hidden Peak Electric, one each for 5900 S. 300 W and I-15/14600 S. The team deployed and picked up three mobile VMS signs for Utah Open Golf Tournament held at Thanksgiving Point. The team replaced two VSL signs, one each at I-80 EB @ MP139.38 and I-80 EB @ MP 140.37, SU. Inspections were performed on 11 meter bases for the Point Project, along with preventative maintenance performed on 111 TMS locations. There are 21 open work orders, 14 which are on hold for loop replacements. The Electronics Lab closed 13 work orders during the month of July.

#### **Express Lanes Team**

The Express Lane Team closed 258 work orders and conducted the weekly system drive.

The team repaired and programmed 33 lane controllers, replaced 20 lane controllers and rebooted 12. A reader and a VTMS were rebooted. The team recalibrated six pucks, performed preventative maintenance on 12 cabinets, and replaced the N-type connectors between a reader and its antennas. The team also installed one Ethernet relay. David Putnam from the Lab Group assisted with extra manpower as needed.

### **ITS Standards and Specifications**

The first half of the 2017 ATMS Standard revisions went out for coordination during July. Fewer comments were returned and logged into the comment form. HNTB provided engineering, drafting and word processing services to revise the specifications and drawings as needed. The responses to the comment log were prepared for re-submission to the standards section.

Time was dedicated to review and provide either comments or no comments to the other standards groups with large number of revised standards to review.

Work continued to revise the Freeway Management portion of the AT Series Standard Drawings and Specifications.

All work has been suspended for Solar Design and new ITS System Standards.

### **Procurement**

Both Hubbell and New Basis have created precast polymer concrete junction box collars. Both vendors presented the concept to the ITS Systems group. The Fiber Group will test samples to see if they are an effective substitute for cast in place concrete junction box collars.

Research work is ongoing with the Hybrid CCTV cameras.

### **Vendor Visits**

Wireless Technology Incorporated, demonstrated the Sidewinder Hybrid CCTV camera. The M & O staff were impressed with it. The Electronics lab will test a sample unit from this company also.



### Region 1

- ❖ **Statewide Signal Interconnect:** This has been changed to a larger scope and will be called Statewide Signal Interconnect. PineTop Engineering has been working on the design for this to advertise. This is ready for P S & E review.
- ❖ **US-60 and 2700E:** In design.
- ❖ **SR-232 Hillfield Rd. Interchange:** Under construction.
- ❖ **30<sup>th</sup> Street and Harrison:** Under construction.
- ❖ **650 N. I-15 Clearfield:** Under construction.
- ❖ **I-15; SR-30 to the Idaho State line:** This project may be part of a partnership with a telecom.
- ❖ **Layton Interchange:** This project is in design.
- ❖ **32<sup>nd</sup> Street and US-89:** Construction complete, integration in process.
- ❖ **Antelope and Main:** Integration in process.
- ❖ **Sardine Canyon US-89 from Brigham to Wellsville:** In design.
- ❖ **US-89; Antelope Drive Extension:** Construction complete, integration in process.
- ❖ **Logan CCTVs:** This project has been completed and the 30 day burn in is underway.

### Region 2

- ❖ **Managed Motorway Detection – TIRTL Device Testing:** This month the Traffic Mobility Group and Transcore are collecting, analyzing the traffic counts from the TIRTL device. The device is setup on I-15 in Sandy at approximately 9400 South. It is counting the Northbound lanes. This area is difficult to capture all lanes of traffic due to the offset crown being set between lane two and three. The TIRTL needs 2-6 inches of clearance and the offset crown makes it read marginal results in the near lanes. The data collection will determine whether or not the TIRTL can be a viable option.
- ❖ **Salt Lake Valley Traffic Signal Interconnect:** A new contract with Transcore is in place to pick up a number of signals in the Salt Lake City area. These have been lingering for some time while we kickoff the next phase of interconnect work. Transcore will be picking up miscellaneous work on connecting traffic signals that do not require a comprehensive project to develop a communication path.

### Region 3

- ❖ **SR-92 CCTV/Hybrid VMS (12641)** : Wireless antenna failure. Ordered replacement.
- ❖ **Region 3 traffic signal connections (12774)**: SR-198 @ Woodland Hills + CCTV, SR-198 @ 400 North, and SR-198 @ Main St + CCTV in Salem via wireless radio connection. Started 30 day burn-in.
- ❖ **US-40 CCTV/Signal connections (12805)**: STRATA installed connection electronics to eight signals in the basin area. Due to issues with STRATA links, hub switch installation re-scheduled for August.
- ❖ **Provo Canyon RWIS/VMS (11410)**: Project complete.
- ❖ **US-189; State Park to Rock Cut passing Lanes (11415)**: Project under construction. CCTV pole foundations installed.
- ❖ **Spanish Fork; SR-156; 300 South to M.P. 2 (9976)**: Project under construction.
- ❖ **Provo; SR-256; 800 East to University Ave BRT (10266)**: ATMS design of micro fiber and two CCTV's ongoing. Project under construction.
- ❖ **Spanish Fork; Canyon Rd @ 2550 E Signal (10960)**: Project under construction.
- ❖ **Provo; US-89 (300 S); 100 East to 700 East (10137)**: Project under construction.
- ❖ **Ut. Co. Signal Interconnect (13244)**: Project advertised.
- ❖ **Eagle Mountain; SR-73 @ Sunset Dr. (13217)**: Started 30 day burn-in.
- ❖ **I-15 Fiber; Payson to Santaquin (14149)**: Performed a field review of project location to verify budget.
- ❖ **Pleasant Grove; US-89 @ 200/220 South (14683)**: Project under construction.
- ❖ **Highland; SR-92 @ 6400 West Signal/CCTV (14595)**: Held PS&E.
- ❖ **American Fork; US-89 @ Main St./200 East (13061)**: Project in design.
- ❖ **Payson; 1400 South State St (SR-198) Signal/CCTV (14573)**: Held project kick-off.

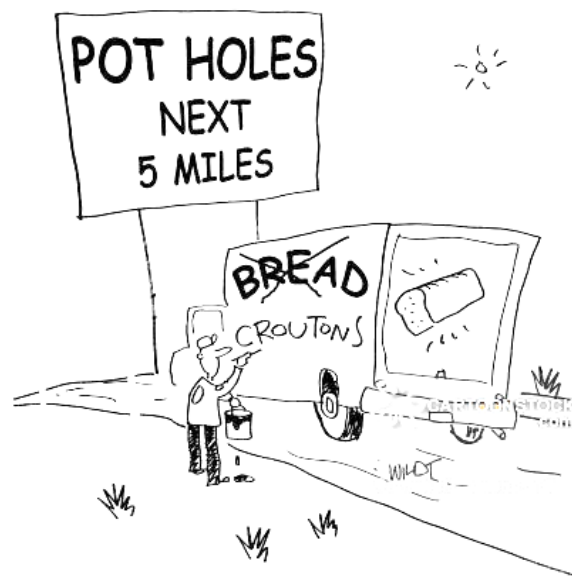


### Region 4

- ❖ **St. George:** This project is complete, except for some city and UDOT fiber coordination.
- ❖ **Salina VMS and Fiber:** Under construction.
- ❖ **Fiber upgrade for US-6, Helper and Price Signal Integration:** Telecom work has been completed. UDOT is ready to complete the final contractor package for a procurement contract. The package is ready. We will be meeting with contractors to clear up some environmental requirements. All signals in Price have been integrated.
- ❖ **I-70 in Richfield:** In design.
- ❖ **Cedar City Fiber:** Under construction.
- ❖ **Beaver Shed and Fiber HUB:** Under construction.
- ❖ **Arches CCTV:** Cache Valley Electric, Rocky Mountain Power and Pinetop to meet on site and complete in one shot.
- ❖ **Bryce Signal:** The contractor is looking into the splicing and construction details.







### Acronyms

<b>CCTV</b>	Closed Circuit Television	<b>DPS</b>	Department of Public Safety
<b>EIS</b>	Emergency Information System	<b>HAR</b>	Highway Advisory Radio
<b>I2TMS</b>	Integrated Interagency Traffic Management System		
<b>ITS</b>	Intelligent Transportation System	<b>LFOT</b>	Local Field Operations Test
<b>MIC</b>	Manager in Charge	<b>MOT</b>	Maintenance of Traffic
<b>RWIS</b>	Road-Weather Information System	<b>TAC</b>	Technical Advisory Committee
<b>TMD</b>	Traffic Management Division	<b>TMS</b>	Traffic Monitoring Station
<b>TOC</b>	Traffic Operations Center	<b>VMS</b>	Variable Message Sign

